

NOTES ON THE GEOGRAPHICAL VARIATIONS OF *CREATONOTOS*
TRANSIENS WALKER WITH DESCRIPTIONS OF A NEW SPECIES
 AND TWO NEW SUBSPECIES
 (LEPIDOPTERA : ARCTIIDAE)*

MASANAO NAKAMURA

14-12, Miyamae 3 chôme, Suginami-ku, TOKYO, 168

It is known that two species of the genus *Creatonotos* Walker, *transiens* Walker and *gangis* Linnaeus, commonly occur in Asia from India to the Weber's line (*transiens*) or to Australia (*gangis*) and northward to the Ryukyu Archipelago. *Gangis* is generally commoner than *transiens* in southern areas but the dominant species in northern areas is rather *transiens*. *Creatonotos*-species is simple in the wing colouration and pattern, but I noticed an imperceptible difference between Indian and Formosan representatives of *transiens* in the course of the survey of Formosan moths. Then, I collected and examined the following 88 specimens of *transiens* from various districts in Asia.

- Nepal : 7♂♂, Chitwan, 29 vii 1972; 1♂, 1♀, Pokhala, -x 1973.
 India : 1♂, Dehra Dun, 30 ix 1971; 1♂, Simula, 25 ix 1971; 2♂♂, Shillong, 19 x 1971.
 Thai : 1♂, 1♀, Fang, 20 xi 1968; 1♂, Doi Suthep, 8-10 vii 1966; 2♂♂, Khao Yai, 19-20 vii 1966; 1♂, 2♀♀, Pan, Chiengrai, 29 xii 1971; 2♂♂, Saraburi, 18 xii 1967; 2♂♂, Sakonnakorn, 20 xi 1967; 2♂♂, Khonkaen, 22 xi 1967.
 West Malaysia : 1♂, Muda Dam, 16 x 1969; 1♂, Fraser's Hill, 5 i 1966.
 Sarawak : 1♂, Kuching, 29 xi 1969; 2♀♀, Kuala Bok, 9 iii 1969; 1♀, same locality, 11 xii 1969; 2♂♂, Marudi, near Miri, 6 xii 1969.
 Java : 2♂♂, Mégamenden, 5 iv 1974.
 Formosa : 4♂♂, 2♀♀, Wulai, Taipei, 24 x 1973; 2♂♂, same locality, 2 viii 1974; 1♀, same locality, 30 vii 1974; 1♀, 13 vi 1972; 2♂♂, 1♀, Tungmen, Hua Lien, 18 v 1971; 1♂, 1♀, Kenting, Pingtung, 23 iv 1971; 3♂♂, 2♀♀, Wushe, Nantow, 5 v 1971; 1♂, Kukuan, Taichung, 15 viii 1975.
 Japan : (Yonaguni Is.) 1♂, 18 vii 1965.
 (Iriomote Is.) 1♀, Ohtomi, 4 iv 1968.
 (Ishigaki Is.) 2♂♂, 1♀, Hirai, 28 iii 1973; 1♂, 1♀, Mt. Banna, 25 iv 1968.
 (Okinawa Is.) 1♂, 1♀, Yona, 18 x 1973.
 (Amami-ôshima Is.) 1♂, 2♀♀, Naze, 25 vi 1968; 2♂♂, 1♀, Nishinakama, 28 vi 1968; 1♀, Mt. Yuwan, 22 vii 1974.
 (Yakushima Is.) 2♂♂, Koshima, 8 vii 1970; 1♀, Ambô, 11 xi 1968; 1♂, Kosugidani, 15 vii 1968.
 Philippines : (Luzon Is.) 1♂, Baguio, 8 vii 1970; 1♂, Tagaytay, 30 vii 1972.
 (Mindanao Is.) 1♂, Subasta, 19 iii 1970; 1♂, 2♀♀, Sibulan, 30 vii 1970; 1♂, Bacayon, 28 vii 1970; 1♂, Mainit Hot Spring, 27 vii 1970; 1♂, Calinan, 27 i 1971.

Before going further, I wish to express my heartfelt thanks to Mr. Hitoshi Hasegawa, Hokkaidô Agricultural Experiment Station, Miss. Isoko Hattori and Mr. Narao Fukuhara, National Institute of Agricultural Science, Tôkyô, Dr. Tsunemaru Okadome and Mr. Yutaka Arita, Meijô University,

* Contribution of the Entomological Survey of the Japan Entomological Academy to the Philippines under cooperation of Nanzan University and San Carlos University, No. 10.

Nagoya, Mr. Mamoru Ôwada, University of Ôsaka Prefecture, Sakai, Mr. Kazuhiko Iwata, Tôkyô, Mr. Yasunori Kishida, Tôkyô and Mr. Tetsuji Hosoda, Wakayama for giving me the chance of the examination of these specimens.

A part of the specimens from Philippines was brought on by the first Entomological Survey of the Japan Entomological Academy in Cooperation with Nanzan University and San Carlos University, and I am particularly indebted to Mr. Ban Tanaka and other members of this survey.

I am obliged to Dr. Hiroshi Inoue, Ôtsuma Woman's University for his aid in literature survey.

Transiens was described based upon the specimens from India and Sulawesi, *vacillans* on those from Hong Kong, India and Philippines and *isabellina* on those from India, the last two being junior synonyms to *transiens*. In this paper, the subspecific name of *transiens* was not applied to each subspecies of *transiens* described below because the specimens from Hong Kong and Sulawesi were not examined by me and the Walker's species probably had no designated holotypes. If the Japanese and Formosan representatives are identical with the Hong Kong representative, *vacillans* must be adopted to this subspecific name.

So far as I examined, the specimens above-listed are divided into five races as follows: Indian race=nominate race (India and Nepal), Indonesian race (Java), Malayan race (Thai, West Malaysia and Sarawak), Japanese race (Japan and Formosa) and Philippine race (Luzon and Mindanao).

The male of each race of *transiens* shows a delicate difference in colouration. The Indian and the Malayan races are suffused with a milky tone but the Japanese and the Indonesian races are suffused with a rosy tone on the greyish white head and thorax. Moreover, the Japanese race is also suffused with a rosy tone on the dark greyish brown male wing and yellowish grey-white female wing. The other races are not suffused with such a tone on the wings but the wing of the Malayan race is somewhat lighter than that of the Indian and Indonesian races. The wing colouration of the Philippine race is dull but has a slightly different tone in comparison with the Indian and Indonesian races. The colour of coremata is grey in the Indian and Japanese races but is white in the Malayan, Indonesian and Philippine races. The most striking feature for the Philippine race is that the wing colouration of female is same as that of male.*

: The length of forewing of the above-mentioned 88 specimens is as follows

- (I) Indian race. Av. ♂: 21.5 mm, ♀: 25.5 mm. ♂/♀=0.84
 (Nepal) ♂: 20.3, 20.5, 20.5, 21.0, 21.0, 21.5, 21.7, 22.3 mm. ♀: 25.5 mm.
 (Idina) ♂: 21.0, 21.5, 22.0, 23.0 mm.
- (II) Malayan race. Av. ♂: 19.4 mm, ♀: 22.0 mm. ♂/♀=0.88
 (Thai) ♂: 17.3, 18.0, 18.3, 19.5, 19.5, 19.7, 20.0, 20.0, 20.7, 21.0 mm. ♀: 20.5, 21.0, 23.0 mm.
 (West Malaysia) ♂: 18.0, 19.0 mm.
 (Sarawak) ♂: 18.6, 19.0, 19.0 mm.
 ♀: 21.8, 22.3, 23.3 mm.
- (III) Indonesian race. Av. ♂: 20.8 mm.
 (Java) ♂: 20.5, 21.0 mm.
- (IV) Japanese race. Av. ♂: 20.8 mm, ♀: 23.3 mm. ♂/♀=0.89
 (Formosa) ♂: 20.5, 20.5, 20.5, 20.5, 20.5, 21.0, 21.0, 21.0, 22.0, 22.5, 23.0 mm.
 ♀: 22.0, 22.8, 23.0, 23.5, 24.0, 24.0, 25.0, 25.0 mm.
 (Japan) ♂: 19.0, 19.5, 19.7, 19.7, 20.3, 20.3, 20.5, 20.7, 21.0, 21.0, 22.0 mm.
 ♀: 22.0, 22.2, 22.5, 22.7, 23.0, 23.5, 23.5, 23.7, 24.0 mm.
- (V) Philippine race. Av. ♂: 23.4 mm, ♀: 24.7 mm. ♂/♀=0.95
 ♂: 22.0, 22.3, 22.5, 22.5, 23.5, 23.5, 23.7 mm.
 ♀: 24.7, 26.0 mm.

From these data, it is known that the male of the Malayan race is slightly but distinctly smaller and the Philippine race is larger than the others. And the difference between male and female in the length of forewing is smaller in the Philippine race in other races.

*A female specimen (Laguna, Luzon, 13 vi 1963, R. Baconquis leg.) which differs from this race and is rather similar to subsp. *koni* Miyake is preserved in my cabinet. I am not able to decide yet whether this specimen was captured as a result of migration or two races of *transiens* are distributed in the Philippines. Therefore, no reference was made to this specimen.

In the male genitalia, the cornuti of *Cretonotos*, needle-like in *gangis* and micro-spinous in *transiens*, consist of three patches of pigmented granules which are named here as bottom patch (B), mid patch (M) and open patch (O) and the mid patch is further divided into four sub-patches (M1-M4) except in the case of the unseparated Philippine race. The Malayan race is intermediate and the four sub-patches are ajointed with each other. Unlike others, the Philippine or the Malayan has only one spine in the bottom patch and the Indonesian has one spine in the open patch. The Indian and the Japanese are allied to the Indonesian but possess the developed open patch. The Indian only differs from the Japanese in that it has the slightly more developed mid patch and has fewer spines in the bottom patch.

In the anellus, *gangis* possesses the least developed, fine and never meet anellus bands and is devoid of the anellus process in the area where the valva is combined with the juxta, while *transiens* possesses an anellus band which is broad but interrupted in the rear and has the anellus process. However, the Philippine race of *transiens* is unique in having a developed anellus band which is broad, entirely encloses the anellus and possesses the remarkably protruded anellus process. The Japanese possesses the less remarkably protruded anellus process. The anellus process of the Indian, the Malayan or the Indonesian is rather tranverse and the Indian is the thickest.

The caudal margin of the 8th abdominal tergite is abrupt in *gangis* and the Indian race of *transiens* but it is slightly protruded at medio-caudad in the Philippine, Japanese, Malayan and Indonesian races of *transiens* and without side pieces excluding the Philippine race of *transiens* which possesses the heavily sclerotized and produced side pieces at the latero-caudal corner. On the other hand, the caudal margin of 8th abdominal sternite is abrupt in *gangis* and Philippine race of *transiens*, rounded in the Indian, Japanese and Indonesian races of *transiens* but intermediate in shape in the Malayan race of *transiens*.

From the above-mentioned characters, the Philippine race of *transiens* was designated as a valid species and another three races were described as the subspecies of *transiens*.

***Cretonotos philippinensis* sp. nov.**

Phissama transiens : Semper (nec Walker), 1899, Schmett. Philippin. Insel., II; 487-8, Taf. 57, t. 5 (♀, Luzon, Mindoro, Mindanao).

Expanse ♂ 22-23.7 mm, ♀ 25mm. Antenna black and not so white in lateral side as in *transiens*; palpus yellow on 1st and 2nd joints and black on 3rd joint; head, tegula, patagia and thorax creamy tone white, especially strongly suffused yellowish on thorax; abdomen same as *transiens* but black spots constantly larger and underside never white as those of some individuals of *transiens*; coremata white; legs same as *transiens*; forewing greyish fuscous but tinged with reddish tone while tinged with blackish tone in *transiens transiens* and *t. sundana*, white band along costa more remarkable, white line at base of inner margin vestigial, never white on veins, without black patches at upper and under corners of discocellular and in submarginal area, fringe concoloured; hindwing concoloured with forewing but somewhat semihyaline, slightly whitish in female, base of costal margin white, without black patches, fringe same as forewing and never white as in *transiens*. Undersurface same

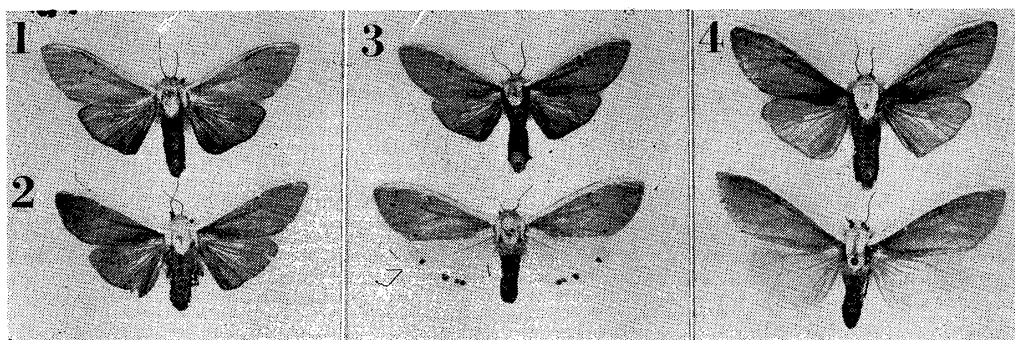


Fig. 1. *Cretonotos transiens* and allied species.

- (1) *Cretonotos transiens koni* Miyake, ♂.
- (2) *Cretonotos transiens sundana* ssp. nov., ♂.
- (3) *Cretonotos transiens orientalis* ssp. nov., upper ♂, under ♀.
- (4) *Cretonotos philippinense* sp. nov., upper ♂, under ♀.

as uppersurface but forewing without white band and hindwing never mingled with white scales at hindangle as in *transiens*.

♂ genitalia: similar to *transiens* but valva weakly inclined, with side arm longer; aedoeagus with developed and completely fused mid cornuti and bottom cornutus consisting of one spine; anellus band broad and entirely enclosing anellus, with remarkably protruded anellus process; 8th abdominal sternite with abrupted and somewhat sclerotized caudal margin; 8th abdominal tergite slightly protruded sharply in medio-caudal area, fold of caudal margin broad with large side piece at latero-caudal corner.

Closely allied to *transiens* Walker but female of this species same as male in wing colouration.

Holotype: ♂, Subasta, Mindanao Is., 19 iii 1970 (Y. Kishida leg.), in coll. Nakamura.

Paratypes: ♂, Baguio, Luzon Is., 8 vii 1970 (B. Tanaka leg.); 2 ♀♀, Sibulan, Mindanao Is., 30 vii 1970 (B. Tanaka leg.); ♂, Mainit Hot Spring, Mindanao Is., 27 vii 1970 (B. Tanaka leg.); ♂, Tagaytay, Luzon Is., 30 vii 1972 (S. Amaike leg.); ♂, Calinan, Mindanao Is., 27 i 1971 (K. Sohma leg.), in coll. Nakamura; ♂, Sibulan, Mindanao Is., 25 vii 1970 (B. Tanaka leg.); ♂, Bacayon, Mindanao Is., 28 vii 1970 (B. Tanaka leg.), in coll. Tanaka.

Distribution: Philippine islands.

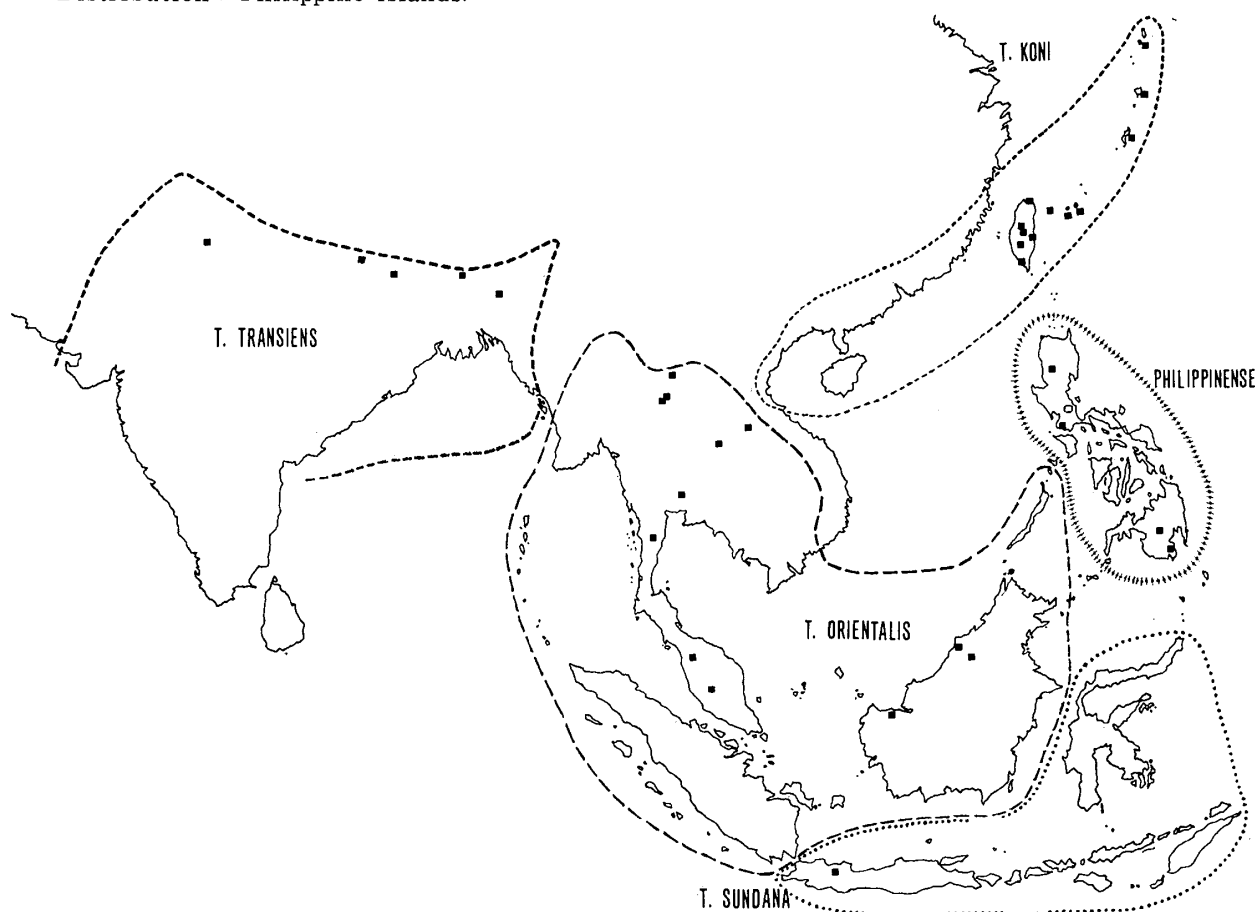


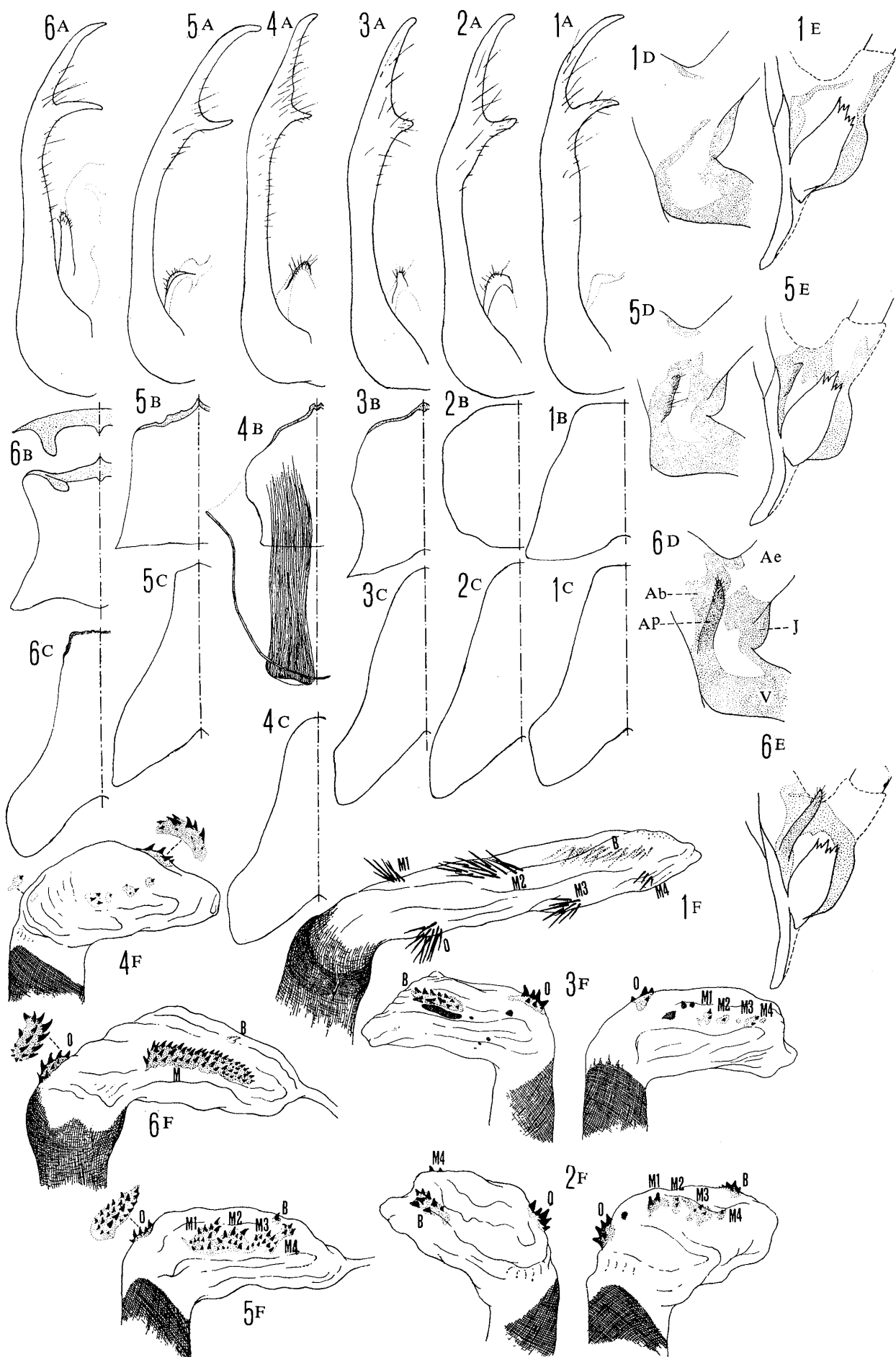
Fig. 2. The presumptive distribution map of *Cretonotos transiens* and allied species.

Fig. 3. The male genitalia of *transiens*, *philippinense* and *gangis*.

- | | |
|--|---|
| (1) <i>Cretonotos gangis</i> Linnaeus. | (2) <i>Cretonotos transiens transiens</i> Walker. |
| (3) <i>Cretonotos transiens koni</i> Miyake. | (4) <i>Cretonotos transiens sundana</i> ssp. nov. |
| (5) <i>Cretonotos transiens orientalis</i> ssp. nov. | (6) <i>Cretonotos philippinense</i> sp. nov. |

A. Left valva and anellus process. B. 8th abdominal tergite. C. 8th abdominal sternite.
D. Anellus, cephalo-lateral view. E. Ditto, lateral view. F. Cornuti.

Ab: anellus band, Ap: anellus process, Ae: aedoeagus, B: bottom patch of cornuti, J: juxta,
M: mid patch of cornuti (M₁-M₄: four sub-patches of mid patch), O: open patch of cornuti,
V: valva.



Cretonotos transiens koni Miyake stat. nov.

Cretonotos koni Miyake, Bull. Coll. Agr. Tokyo Imp. Univ., 8(2): 169, 1909 (♀, Alishan, Chiayi, Formosa).

Expanse ♂ 19.7-22 mm, ♀ 22.2-25 mm. ♂. Differing from nominate subspecies from India in head, tegula, patagia and thorax tinged with rosy tone; forewing somewhat lighter and tinged with rosy tone, hence colouration on costal margin and base of inner margin pinkish white and obscure; most parts of veins pinkish white; coremata grey.

♂ genitalia: valva weakly inclined, with side arm shorter than that of nominate subspecies; aedoeagus with less developed cornuti than that of nominate subspecies; anellus process slightly protruded; 8th abdominal sternite with rounded caudal margin; 8th abdominal tergite slightly protruded in medio-caudal area.

Distribution: Japan (islands between Yaku Is. and Yonaguni Is.) and Formosa.

Cretonotos transiens orientalis ssp. nov.

Phissama transiens: Moore (nec. Walker), Cat. Lep. Ins. Mus. E. I. C., II, 1858: 362 (♀, Penang, West Malaysia).

Expanse ♂ 17.3-20.7 mm, ♀ 20.5-23.3 mm. ♂. Resembling nominate subspecies in suffusing milky tone but somewhat smaller, ground colour of wings slightly paler, white tint on veins obscure and coremata white (in nominate subspecies, coremata grey).

♂ genitalia: valva heavily inclined; aedoeagus with more developed cornuti than those of the other subspecies but bottom cornutus comprising only one tooth; anellus process slightly more rising but narrower than that of nominate subspecies; 8th abdominal sternite with ^-shaped caudal margin; 8th abdominal tergite slightly more heavily protruded than in subsp. *koni* in medio-caudal area and slightly dentate caudal margin.

Holotype: ♂, Fang, Thai, 20 xi 1968 (M. Satô leg.), in coll. Nakamura.

Paratypes: ♂, Muda Dam, Baling, West Malaysia, 16 x 1969 (H. Hasegawa leg.); ♂, Pan, Chienrai, Thai, 29 xii 1968 (I. Hattori leg.); ♀, Kuala Bok, Sarawak, 9 iii 1969 (Y. Arita leg.); ♀, Fang, Thai, 20 xi 1968 (M. Satô leg.); ♂, Doi Suthep, Thai, 8-10 vii 1966 (H. Inoue leg.); 2 ♂, Khao Yai, Thai, 19-20 vii 1966 (H. Inoue leg.), in coll. Nakamura: ♂, Marudi, near Miri, Sarawak, 6 xii 1969 (H. Hasegawa leg.); ♀, Kuala Bok, Sarawak, 11 xii 1969 (H. Hasegawa leg.), in coll. Nat. Inst. Agr. Sci. Tôkyô.

Distribution: Thai, West Malaysia and Sarawak.

Cretonotos transiens sundana ssp. nov.

Phissama vacillans: Moore (nec. Walker), Cat. Lep. Ins. Mus. E. I. C., II, 1858: 362 (♂ et ♀, Java).

Expanse ♂ 20.5-21 mm. ♂. Very closely allied to nominate subspecies but only differing from it in head, tegula, patagia and thorax slightly suffused with rosy tone; forewing darker and scarcely white tinted on veins; coremata white.

♂ genitalia: valva same as nominate subspecies; aedoeagus with degenerate cornuti especially in open cornutus; anellus process similar to that of subsp. *orientalis*; 8th abdominal sternite with rounded caudal margin; 8th abdominal tergite similar to that of subsp. *koni* but broader and caudal margin oblique.

Holotype: ♂, Mégamenden, Java, 5 iv 1974 (K. Iwata leg.), in coll. Nakamura.

Paratype: ♂, data same as holotype, in coll. Nakamura.

Distribution: Java.

The distribution of these species or subspecies is not distinct yet but is presumed as in Fig. 2.

摘 要

1 新種および 2 新亜種の記載を含むハイイロヒトリの地理的変異についての覚え書

東南アジア一帯に広く分布する普通種ハイイロヒトリ *Cretonotos transiens* Walker の標本 88 個体をネパール、インド、タイ、西マレーシア、サラワク、ジャワ、フィリピン、台湾、琉球列島から蒐めて比較検討した結果、これらは大きさ、雄の色調、交尾器の形状において地域的に五つのグループに分け得ることを知った。このうちフィリピンのものは他のグループのものに比べ、前翅長において♂、♀の差が小さく、♀が♂と同一の色斑を示し、触角側方が白色を呈せず、後翅がより透明で、同縁毛が白色を帯びない点で *transiens* とは別の種類と考えられるので *C. philippinense* sp. n. として記載した。他の 4 グループは未だ調査地域が充分でないが、大体インド中部以北ネパールまでに原名亜種が、インドシナマレー半島、ボルネオ島に *C. t. orientalis* ssp. n., ジャワ島に *C. t. sundana* ssp. n., 台湾以北に *C. t. koni* Miyake (もし香港のものと同じなら *vacillans* Walker を亜種名とすべきだろう) が分布するものと考えられる。この 4 グループのうち、前二者は♂の頭胸部の灰白色の色調に黄味を帯びるが、後二者は桃色味を帯びる。

♂交尾器では *cornuti*, *anellus*, 第 8 背板、同腹板の形状に差異が認められる。本属の *cornuti* は棘を伴った三つの色斑部からなり、しかも真中の色斑は更に 4 個の小色斑に分かれる：*philippinense* では真中の色斑は分離せず、*transiens* のうち *orientalis* は基部の色斑が、また *sundana* は先端の色斑が発達しない。*Anellus* は *aedoeagus* をとりまく多少共骨片化した *anellus band* とその基部に生ずる *anellus process* とからなり、*philippinense* では *anellus band* が完全にとりまいているのに対し、*transiens* では背中で途切れている。*Anellus process* は *koni* が最も発達が悪い、

(中村正直)

日本未記録のモンシロモドキの 1 種

岸 田 泰 則¹⁾ 齊 藤 秀 生²⁾

¹⁾ (155) 東京都世田谷区北沢5-20-2 ²⁾ (156) 東京都世田谷区桜1-1-1 東京農業大学昆虫学研究室

An unrecorded species of *Nyctemera* from Japan
(Lepidoptera: Arctiidae, Nyctemerinae)

Yasunori Kishida and Syusei Saito

筆者の一人、齊藤は、1975年4月に沖縄県石垣島にて採集を行った際に、日本から記録のないモンシロモドキ属の1種を得た。岸田は、その標本を調査した結果、次のように同定できたので日本未記録として報告する。

本文に先立ち、文献を御教示下さった杉繁郎氏にお礼申し上げる。

Nyctemera coleta (Stoll) ネットイモンシロモドキ (新称)

Phalaena coleta Stoll [1781] Utitl. Kapellen, 4: 153, pl. 368.

Nyctemera coleta. Hübner [1820] Verz. Bek. Schmett., : 178.

Nyctemera tripunctaria, Matsumura (nec. Linné) [1930] Ins. Mats., 5 (1/2): 62.

1♀, Bannadake Ishigaki Is. Okinawa Prof., 1. Apr. 1975, S. Saito leg.